

ACC NR: AP6023428

ear dependence of the fusion temperature on the plasticizer content is due to the above-mentioned contribution of supermolecular forces. The viscous flow of the initial and plasticized copolymer takes place substantially below its fusion temperature; hence, crystalline formations take part in the viscous flow. Orig. art. has: 4 figures and 1 table.

SUB CODE: 11/ SUBM DATE: 21May65/ ORIG REF: 004/ OTH REF: 004

Card 2/2

*БІЛКОМІАН, 15. 42.*  
PONOMARENKO, A.A.; SETARKMAN, D.Y.

Preparation of 3,4,6-trichloronaphthalic acid and its anhydride.  
Nauk.zap.L'viv.un. 21:130-136 '52. (MIRA 10:7)

1. Kafedra organicheskoy khimii.  
(Naphthaledicarboxylic acid.)

LEBEDEV, V.P.; SHTARKMAN, L.B.; ARZHAKOV, S.A.

Problems in the mechanics of packing of powdered polymers. Plast.  
massy no.6:32-37 '63. (MIRA 16:10)

LYUBIMSKY, E. Z., SAMYNNIN, S. S. and SHTARKMAN, V. S.

"Optimum Information Coding in Automation and Multistep Automation Schemes for Production Processes."

Report presented at the Conference on Automation and Computation Engineering Moscow, 5-8 March 1957. Organized by All Sci. Eng. and Tech. Society for Apparatus Building.

Math Anal on Steklov, AS USSR

sov/112-59-18-38806

Translation from: Referativnyy zhurnal, Elektrotehnika, 1959, Nr 18, p 116 (USSR)

AUTHOR: Shtarkman, V.S.

TITLE: Economy Block of Operating Cells in the PP-2

PERIODICAL: V sb.: Probl. kibernetiki. Nr 1, Moscow, Gos. izd-vo fiz.-matem. lit., 1958, pp 185 - 189

ABSTRACT: A possible algorithm of economy of operating cells is described which is used in the PP-2 (programming program), as well as a program corresponding to this algorithm. Operating cells in the PP-2 are called those cells which are destined for the storing of intermediate results. It is not expedient to assign to each of these results its own operating cell. It is proposed to use cells with old results for the recording of new ones. Therefore, it is necessary that the instructions to the given part of the PP-2 should be carried out subsequently (without control transmission) and that the addresses which are assigned to the intermediate results should not be changed during the operating process. The old result is not replaced by a new one as long as it is still required for the program.

Card 1/2

✓

Economy Block of Operating Cells in the PP-2

SOV/112-59-18-38806

This requirement is considered by a sign in the command. An economy circuit for a number of operators was developed which meets the above-mentioned conditions. Altogether the economy block consists of 102 commands, 12 constants and requires 9 operating cells.

A.F.S.

✓

Card 2/2

SHATARKOV, L. N.

Dec 49

UNIV Nuclear Physics - Ionization Chambers  
Showers

"Form of the Pulse in Ionization Chambers," A. I. Petrulin, N. I. Podgoretskiy,  
N. D. Fedorov, L. N. Shatarkov, M. N. Sichorbakova, 3 pp

"Dok Ak Nauk SSSR" Vol LXIX, No 4

Bridge, Hazen, Rossi, and Williams, making use of fact that collection time for electrons  
is 2-3 orders less than that for positive ions (electrons are negative ions when  
chamber is filled with carefully purified noble gas), used high-frequency amplifier  
to obtain on its output a pulse connected solely with movement of electrons. Authors  
used amplifier passing both high and low frequencies to register form of pulse  
provided by positive ions. Submitted by Acad D. V. Skobel'tsyn 3 Sep 49

PA—155T51

ALEKSANDROV, Yu. A., DELONE, N. V., SLOVCKHOTOV, L. I., SOKOL, G. A.  
SHTARKOV, L. N.

"Photodisintegration of Deuteron at 50-150 Mev.,"

Lebedev Physics Inst. , Acad. Sci. USSR

paper submitted at the A-U Conf. on Nuclear Reactions in Medium and Low Energy  
Physics, Moscow, 19-27 Nov 57.

*D. N. K. C. L. N.*  
ALEKSANDROV, Yu.A.; DELONE, N.B.; SLOVOKHOTOV, L.I.; SOKOL, G.A.; SHTARKOV,  
L.N.

Photodisintegration of deuterons at energies from 50 to 150 Mev.  
Zhur. eksp. i teor. fiz. 33 no.3:614-620 S '57. (MLRA 10:11)

1. Fizicheskiy institut im. P.N. Lebedeva AN SSSR.  
(Deuterons) (Nuclear reactions)

SHTARKOV, L. N., CAND PHYS-MATH SCI, "PHOTODISINTEGRATION  
OF DEUTERIUM <sup>medium</sup> WATER UNDER MEAN ENERGIES OF GAMMA-RAY QUANTA."

DUBNA, 1961. (JOINT INST OF NUCLEAR RESEARCH. LABORATORY  
OF NUCLEAR PROBLEMS). (KL-DV, 11-61, 210).

21.6000

27697  
S/120/61/000/003/007/041  
E032/E314

AUTHORS: Baranov, P.S., Slovokhotov, L.I., Sokol, G.A. and Shtarkov, L.N.

TITLE: A Differential Method for Determining the Efficiency of a  $\gamma$ -counter

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No. 3,  
pp. 63 - 66

TEXT: The present authors describe a method which can be used to determine the efficiency of a  $\gamma$ -counter in the energy range up to some hundreds of MeV. The method is based on the recording of coincidences between the proton and the  $\gamma$ -ray which appear during the photo-production of neutral mesons on hydrogen. A block diagram of the apparatus is shown in Fig. 2. The  $\gamma$ -ray beam has a maximum energy of 265 MeV and was obtained from the synchrotron of the Physics Institute of the AS USSR. It was collimated by two lead collimators before reaching the liquid-hydrogen target. The latter consisted of a thin-walled container (brass wall 15 mg/cm<sup>2</sup> thick) having a volume of Card 1/8

A Differential Method ....

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S/120/61/000/003/007/041  
E032/E314

100 cm<sup>3</sup>. Protons from the reaction:

$$\gamma + p = p + \pi^0 \quad (1)$$

$$\pi^0 = 2\gamma \quad (2)$$

passed through aluminum windows ( $250 \mu$ ) and were recorded by a telescope consisting of three proportional counters connected in coincidence (resolution equals  $2 \times 10^{-6}$  sec) and a single scintillation counter connected in coincidence with a  $\gamma$ -ray counter (resolving time of the fast coincidence circuit:  $5 \times 10^{-9}$  sec). The proton telescope records protons with energies  $E_p \pm \Delta E_p$ , where  $\Delta E_p$  is determined by an absorber placed in front of the telescope and the discriminator of the third counter. The protons are separated from the charged mesons in the first and second counters of the telescope, using the difference in the specific energy losses of these particles.

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A Differential Method ....

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S/120/61/000/003/007/041  
E032/E314

The  $\gamma$ -counter consists of two scintillators (3.5 g/litre solution of para-terphenyl in phenyl-cyclohexane). The scintillators are 15 cm in diameter and 3 cm thick and are mounted on  $\Omega\beta Y-33$  (FEU-33) photomultipliers. In order to increase the efficiency of the  $\gamma$ -counter lead converters, 0.8 cm thick, were placed in front of the counters. The scintillation counter in the proton telescope consisted of a plastic scintillator (terphenyl in polystyrene), 0.5 cm thick and 6 cm in diameter. It was mounted on a perspex light pipe and an FEU-33 photomultiplier. Recording of the coincidences between the scintillation channels was achieved with the "fast" coincidence circuit described by A.A. Rudenko (Ref. 1 - PTE, 1958, No. 6, 60). The resolution and efficiency of this coincidence circuit was checked in special experiments. The efficiency of recording of the coincidences turned out to be 95%. In these experiments there was an appreciable proton background due to the target walls and the Compton scattering of the  $\gamma$ -rays

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E032/E314

A Differential Method ....

$$\gamma + p = \gamma' + p' \quad (5)$$

The proton background was determined with an empty target and was found to be 10%. The proton yield, due to the reaction (5) was neglected since the corresponding reaction cross-section was lower by two orders of magnitude than the cross-section of the reaction (1). On the other hand, the  $\gamma\gamma$ -coincidence background can be excluded entirely by suitable disposition of the proton telescope in the  $\gamma$ -counter. Fig. 3 shows the efficiency of the  $\gamma$ -counter  $\eta$  (in %) as a function of the  $\gamma$ -ray energy in MeV. The points are experimental and the curve is calculated from the formula

$$\eta = [1 - \exp(-2\mu T)] \frac{(bT - 1, y_o)!}{\Gamma(bT)} \quad (6)$$

where  $\mu$  is the  $\gamma$ -ray absorption coefficient for lead

Card 4/3

27697  
S/120/61/000/003/007/041  
E032/E314

A Differential Method ....

(Ref. 2 - Heitler, V. - Quantum Theory of Radiation, 1956, Izd-vo IL),  $T$  is the thickness of the lead converter,  $(bT - 1, y_0)$  is the incomplete gamma-function,  $b = 2.6 \text{ cm}^{-1}$  (for Pb),  $y_0 = \ln(E_e^{\max}/E_e^{\min})$ ,  $E_e^{\max}$  is the maximum electron energy and  $E_e^{\min}$  is the minimum electron energy corresponding to the threshold of the fast coincidence circuit (2 MeV). If the proton telescope records only protons with energies  $E_p \pm \Delta E_p$ , leaving at an angle  $\theta_p \pm \Delta\theta_p$  to the direction of the primary photon beam, then the kinematics of the photo-production of  $\pi^0$ -meson (1) and the  $\pi^0$ -meson decay (2) can be used to determine the energy spread of the  $\gamma$ -rays recorded in coincidence with the protons.

Acknowledgements to P.A. Cherenkov for his interest and to T.I. Kovaleva for taking part in the construction of the fast coincidence circuit.

Card 5/8

A Differential Method ....

27697  
S/120/61/000/003/007/041  
E032/E314

There are 3 figures and 2 Soviet references.

ASSOCIATION: Fizicheskiy institut AN SSSR (Physics  
Institute of the AS USSR)

SUBMITTED: August 3, 1960

Card 6/8

S/056/61/041/006/004/054  
B108/B138

AUTHORS: Baranov, P. S., Slovokhotov, L. I., Sokol, G. A., Shtarkov, L.N.

TITLE: Elastic scattering of 247-Mev gamma quanta from hydrogen

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41,  
no. 6(12), 1961, 1713-1721

TEXT: Experimental data are very scarce on elastic gamma scattering from hydrogen involving energies higher than the meson photoexcitation threshold. Such information is indispensable in establishing a theory of Compton effect in this energy region, and may provide information on proton structure. The authors studied the angular distribution of gamma quanta, with energies of  $(247 \pm 10)$  Mev, scattered from liquid hydrogen. The coincidences of scattered gamma quanta and recoil protons were recorded. By determining the energy of the recoil protons at a fixed gamma energy, the desired process  $\gamma + p \rightarrow p' + \gamma'$  (1) could be distinguished from the background process  $\gamma + p \rightarrow p' + \pi^0$  (2)

$\downarrow$   
 $\gamma_1 + \gamma_2$

Card 1/3

Elastic scattering of 247-Mev...

S/056/61/041/006/004/054

B108/B138

Results are given in the Table. The error in the cross section of reaction ( - ) is about  $\pm 15\%$ . Only for departure angles of 56 and 74° (c.m.s.) of the gamma quanta does the error amount to some 25 %. The results are in qualitative agreement with those of other publications.

Discrepancies between the experimental results and theoretical calculations ↙ on the basis of one-dimensional dispersion relations are mainly due to deficiencies in the theory. The studies were made at the synchrotron of the Lebedev Physics Institute (see Association entry). The authors thank Professor P. A. Cherenkov, Professor V. I. Gol'danskiy, Doctor of Physics and Mathematics A. M. Baldin, and the synchrotron team for their collaboration. N. N. Bogolyubov, D. V. Shirkov (DAN SSSR, 113, 529, 1957), L. I. Lapidus, Chou Kuang-chao (ZhETF, 39, 1056, 1960), and N. F. Nelipa, L. V. Fil'kov (Preprint FIAN, A-2, 1961) are mentioned. There are 5 figures, 1 table, and 17 references: 9 Soviet and 8 non-Soviet. The three most recent references to English-language publications read as follows: M. Jakob, J. Mathews. Phys. Rev., 117, 854, 1960; R. Blokil et al. Phys. Rev. Lett., 5, 384, 1960; A. V. Tollestrup et al. Proc. 1960. Ann. Intern. Conf. on High Energy Physics at Rochester, p. 27.

Card 2/3

Elastic scattering of 247-Mev...

S/056/61/041/006/004/054  
B108/B138ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR  
(Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: June 9, 1961

Legend to the  
Table: (1)  
degrees, (2)  
laboratory system,  
(3) center of mass  
system, (4) ratio  
( $\times 10^4$ ) of the  
products of  
reaction (1) to  
reaction (2),  
(5)  $\text{cm}^2/\text{steradian}$ .

$\theta_p$ град 1	$\theta_\gamma$ град 1	$\theta_\gamma$ град 1	$\theta_p$ град 2	$\Delta \theta_p$ град 1	$\bar{\theta}_\gamma$ (c. m.) град 1	$E_\gamma$ MeV град 1	$\Delta E_\gamma$ , MeV град 1	4 Отношение выходов ( $\times 10^4$ ) реак- ций (1) и (2) 5 $d\sigma / (d\Omega)^2$ , $\text{cm}^2/\text{страд}$ (c. m.) 3
16	140	104	15,5	$\pm 1,85$	148,0	247,7	$\pm 5$	140 $\pm$ 12 4,17 $\pm$ 0,35
24	121	94	23,5	$\pm 1,70$	132,2	247,8	$\pm 5$	110 $\pm$ 9,0 3,33 $\pm$ 0,28
36	94	140	35,0	$\pm 1,70$	108,8	247,2	$\pm 5$	74 $\pm$ 8,0 3,09 $\pm$ 0,33
44	78	—	42,5	$\pm 1,70$	83,1	245,2	$\pm 6$	25,7 $\pm$ 2,7 2,08 $\pm$ 0,24
56	56	94	54,5	$\pm 2,0$	70,3	237,0	$\pm 15$	9,43 $\pm$ 1,37 1,80 $\pm$ 0,20
64	42	76	62,0	$\pm 2,0$	54,8	232,6	$\pm 15$	8,07 $\pm$ 1,07 1,34 $\pm$ 0,18

Card 3/3

S/056/61/041/006/051/054  
B111/B104

AUTHOR: Shtarkov, L. N.

TITLE: Deuteron photodisintegration at medium energies

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41,  
no. 6, 1961, 2011 - 2014

TEXT: The author makes a critique of the theoretical work done so far in this field, and compares published results with experimental data. The four parameters appearing in the relation

$d\sigma/d\Omega = a + b \sin^2\theta + c \cos\theta + d \sin^2\theta \cos\theta$  were determined at six different gamma energies between 50 and 150 Mev (Ref. 10: Yu. A. Aleksandrov et al., ZhETF, 33, 614, 1957). As is shown, the electromagnetic interaction with a two-nucleon system between 100 and 120 Mev can be described as interaction of the field with the current and with the magnetic field of the nucleons, without assuming meson effects. A quantitative agreement was found only with theoretical studies in which tensor interaction, transitions to the  $3F_2$  states, and contributions of certain multipole terms

Card 1/3

S/056/61/041/006/051/054

B111/B104

Deuteron photodisintegration at ...

to the cross section were taken into account, and in which only phases of nucleon-nucleon interaction corresponding to a positive sign of the tensor potential were used. The accuracy of both theoretical and experimental results is too low as to allow a clear choice between the two probability values of D-waves in the deuteron. In the range above 100 - 120 Mev the experimental values of the isotropic component of angular distribution and the component proportional to  $\cos \theta$  exceed theoretical values noticeably. The following reasons are indicated for an explanation, without assuming virtual mesons: (1) Already between 50 and 70 Mev the interference terms of the cross section lead to a change of angular distribution; this contribution grows steeply at higher energies, and cannot be neglected any longer. (2) The two above-mentioned components of angular distribution exert a noticeable influence upon the disintegration of the phases of the  $^3P_J$  states, and the latter affects that of the  $^3D_J$  states.

Experimental data for the parameters c and d are not very accurate, and further experiments are therefore required between 50 and 200 Mev to attain an accuracy of 5%. It should be possible to obtain full agreement between experiment and theory by improving both the measuring accuracy and theoretical calculations in the fields indicated. There are 1 figure and Card 2/3

SHTARKOV, L.N.

AUTHORS: Aleksandrov, Yu.A., Delone, N.B., Slovokhotov, L.I. 56-3-11/59  
Sokol, G.A., Shtarkov, L.N.  
TITLE: The Photodisintegration of the Deuteron at Energies from  
50 to 150 MeV (Fotorasshchepleniye deytona pri energiyakh ot 50  
do 150 MeV)

PERIODICAL: In the 265 MeV synchrotron of the F.I.A.N. the photodisintegration  
was measured in D<sub>2</sub>O and H<sub>2</sub>O preparations by recording the protons  
in a telescope consisting of 2 proportional recording tubes. For  
the  $\gamma$ -energies of 54, 70, 88, 110, 129, 148 MeV the differential  
effective cross sections were measured at the following angles:  
22,5; 45; 67,5; 90; 112,5; 135; 157,5 and diagrammatically  
recorded. There are 3 figures and 2 tables.

ASSOCIATION: Physics Institute im. P.N. Lebedev, USSR Academy of Sciences (Fizicheskiy institut  
imeni P.N. Lebedeva Akademii nauk SSSR)

SUBMITTED: March 27, 1957.

AVAILABLE: Library of Congress

Card 1/1

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4

IMANOV, P. S.; BLOVKHOTOV, L. I.; GOKOL, G. A.; SITARKOV, L. N.

"Elastic Scattering of  $\gamma$ -Rays by Hydrogen at the Energy 247 MEV"

report presented at the Intl. Conference on High Energy Physics, Geneva,  
4-11 July 1962

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4"

L 41240-65 EIT(n)/T/EWA(n)-2

ACCESSION NO: A13040506

S/2504/64/022/000/0155/0221

20

9

AUTHOR: Sutarkov, L. N.

B71

19

TITLE: Deuteron photodisintegration at medium Gamma-ray energies

SOURCE: AM SSSR. Fizicheskiy institut. Trudy, v. 22, 1964. Fotoyadernyye reaktsii i nакопители частиц (Fotonuclear reactions and particle accumulators), 155-221.

TOPIC TAGS: deuteron photodisintegration, proton angular distribution, photodisintegration theory, Gamma bombardment, meson production

ABSTRACT: The basic aim of the investigation was a detailed experimental study of the deuteron photodisintegration reaction over a wide range - 50 to 150 MeV - of Gamma-ray energies and over the largest possible domain of proton angles. The final goal was to acquire information about possible deviations from the simplified deuterium photodisintegration theories (ignoring the meson effects) at energies approaching the threshold of  $\pi$ -meson photoproduction and, perhaps, to collect information about nucleon-nucleon interactions at energies above 50 MeV. The experimental part was completed mainly during 1955 and presented at two All-Union conferences during the summer of 1956 and fall of 1957. The results concerning the

Cord 1/4

L 41240-65  
ACCESSION NR: AT4043506

differential and total cross sections were published in 1957 (Yu. A. Aleksandrov, N. B. Delone, G. A. Sokol, L. N. Shtarkov, ZhETF, 33, 3, 614, 1957). Much later, the authors developed a general theory concerning the possible shapes of the angular dependence of the differential cross section and carried out an additional processing of the experimental results. With the appearance of more accurate theoretical calculations in 1959-1960, these newly processed results were compared with those from theoretical computations. The resulting conclusions were published in 1961 (L. N. Shtarkov, ZhETF, 41, 2011, 1961) and they are presented in this dissertation of the author, defended on November 3, 1961. The parallel studies by E. A. Whalin, B. D. Schriever, A. O. Hanson (Phys. Rev., 101, 1, 377, 1956) cover a wider range of energies, but smaller domain and number of angles. Another similar investigation by J. A. Galey at Chicago (Phys. Rev., 117, 3, 763, 1960) produced angular distributions with accuracies below those of the Soviet group. This thesis presents, in addition, the first correct analysis of the experimental results from the point of view of the newer theoretical works. A brief historical survey is followed by a survey of the experimental and theoretical articles on deuteron photodisintegration, the description of the experiments and of the methods for the processing of results, and the description and evaluation

Card: 2/6

L 41240-65  
ACCESSION NR: AT4040506

of the numerical results. The differential deuterium photodisintegration cross sections are given for the 20 to 160° range of proton directions (in the lab. system), and proton energies from approx. 50 to 150 MeV; the statistical accuracy is about 10%, while the systematic error due to incorrect absolute calibration is not higher than 10%. In the best covered 100-120 MeV region, the experimental results for all four angular distribution parameters agree, within the experimental errors, with the newest theoretical calculations. While the explicit form of meson effects seems to contribute little to the process, various "second order" effects (like the transitions into the  $^3P_2$  final state, tensor final state interactions, contributions of certain "nonbasic" multipole transitions) must be systematically included. The study of nucleon-nucleon interactions demands the assignment of the positive sign to the tensor potential. However, the experimental values for the isotropic and  $\cos\theta$  - proportional components in the angular distribution are noticeably larger than the theoretically obtained numbers, and the author discusses the possible reasons for this discrepancy. The quality of the experimental results was secured by a newly designed reliable telescope for proton registration slightly above 10 MeV, by an improved procedure for the differential heavy and ordinary water measurements, by a new method for the calculation of the differential cross section utilizing the calculated proton registration energy resolution function, and by taking into account the proton multiple scattering within proton fil-

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ACCESSION NR: AT4040506 //

ters. The thesis concludes with suggestions for future possible experiments and a list of possible ways to improve the theoretical computations. "The author thanks his colleagues Yu. A. Aleksandrov, N. B. Delone, L. I. Slovokhotov, and G. A. Sokol who participated in the joint experimental investigations; the sponsor Prof. P. A. Cherenkov, Academician V. I. Veksler for the evaluation of various problems appearing during the study; Doctor of Physical-Mathematical Sciences A. M. Baldin for valuable advice during the evaluation of the results; Cand. Phys. Math. Sciences V. I. Ritus for explanations concerning the theory of angular distributions of photonuclear reactions; Scientific Coworkers V. A. Petrun'kin and A. I. Lebedev for the evaluation of problems concerning the theory of deuteron photodisintegration; and the collective group operating the 260 MeV synchrotron of the FIAN SSSR together with all the coworkers in the laboratory of photomeson processes who helped carry out the investigation." Orig. art. has: 50 formulas, 18 figures, and 10 tables.

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva, AN SSSR(Physics institute,  
AN SSSR)

SUBMITTED: 00  
NO REF Sov: 011

ENCL: 00 SUB CODE: NP  
OTHER: 125

*peo*  
Card 4/4

L 23745-66 EWT(1)/EWT(m) T

ACC NR: AP6007216

SOURCE CODE: UR/0056/66/050/002/0364/0366

AUTHORS: Baranov, P. S.; Slovokhoto, L. I.; Sokol, G. A.; Shtarkov, L. N. 36

ORG: Institute of Physics im. P. N. Lebedev, Academy of Sciences, SSSR (Fizicheskiy institut Akademii nauk SSSR)

TITLE: Refinement of the experimental values of the Compton effect cross sections for the proton 19

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 50, no. 2, 1966, 364-366

TOPIC TAGS: Compton effect, proton interaction, differential cross section, angular distribution, gamma quantum

ABSTRACT: This is a continuation of earlier work on the angular dependence of the Compton effect cross section for the proton at an average gamma-quantum energy of 247 Mev (ZhETF v. 41, 1713, 1961). In the present work the authors calculate the differential cross sections for the Compton effect on the proton at gamma quantum energies

Card 1/2

L 23745-66  
ACC NR: AP6007216

from 230 to 250 Mev, using a more accurate analysis and making absolute the earlier experimental data. The analysis of the earlier data was with the aid of an electronic computer, so that the approximations of the original analysis could be eliminated. The more accurate values are approximately 20 -- 30% higher than in the earlier work, but the angular distribution has not changed noticeably. The total cross section obtained for the Compton effect at 248 Mev is  $(95.0 \pm 9.3) \times 10^{-32}$ . Orig. art. has: 3 formulas and 1 table.

SUB CODE: 20/ SUBM DATE: 01Sep65 ORIG REF: 002/ OTH REF: 004

Card

2/2 UVR

SHTARKOV, M.G.

SOV/81-59-19-69675

Translation from: Referativnyy zhurnal. Khimiya, 1959, Nr 19, p 450 (USSR)

AUTHORS: Rabinovich, A.L., Shtarkov, M.G., Dmitriyeva, Ye.I.

TITLE: The Methods of Determination and the Values of the Elasticity Constants of Glass Textolite at Increased Temperature

PERIODICAL: Tr. Mosk. fiz.-tekhn. in-ta, 1958, Nr 1, pp 115 - 144

ABSTRACT: The results have been considered of investigations on the determination of the strength and elasticity constants of glass plastics at higher temperatures. Three methods have been developed for determining elasticity constants at a temperature of up to 200°C with the aid of a Martens device, resistance transducers and the frequency method. Data are cited on the values of the elasticity modulus and Poisson's coefficient for the most widespread KAST-V sheet glass textolite.

V. Lapshin ✓

Card 1/1

RABINOVICH, A.L., kand.tekhn.nauk; SHTARKOV, M.G.; DMITRIYeva, Ye.I.

Regularities in the uniform deformation of hardened metals in  
case of uniaxial stretching. Trudy MFTI no.3:194-246 '59.

(MIRA 13:5)

(Deformations (Mechanics))

28(5)

AUTHOR:

Shtarkov, M. G.

SOV/32-25-6-44/53

TITLE:

Device for the Measurement of Deformations (Pribor dlya izmereniya deformatsiy)

PERIODICAL:

Zavodskaya Laboratoriya, 1959, Vol 25, Nr 6, pp 754-755 (USSR)

ABSTRACT:

A device was constructed for the purpose of measuring elastic and plastic deformations on round and flat samples in extension tests. The device (Fig 1) consists of two equal systems fixed to the opposite ends of the sample. The measurement of deformation is made with resistors which were fastened with an adhesive HF4 to steel springs connecting the upper and lower part of the measuring device. The resistors are connected in series which increases the measuring sensitivity. The resistors are connected with an electronic deformation measuring device of the TsAGI-type (produced by METI). The extension diagram (Fig 2) of a flat sample of an aluminum alloy V-95 is given. There are 2 figures.

ASSOCIATION:

Moskovskiy fiziko-tehnicheskiy institut (Moscow Physico-technical Institute)

Card 1/1

SHTARKOV, M.G.

Universal device for measuring deformations in complex loading.  
Trudy MFTI no.7:97-104 '61. (MIRA 15:4)  
(Deformations (Mechanics)---Measurement)

SHTARKOV, V.I.

Investigating the properties of textile materials in Russia  
in the 18th and first half of the 19th century. Izv. vys. ucheb.  
zav.; tekhn. tekstil. prom. no.5:28-36 '58. (MIRA 11:12)

1. Vsesoyuznyy zaochnyy institut tekstil'noy i legkey promyshlennosti.  
(Textile fabrics--Testing)

SHTARKOV, V.I., dots.

History of the development of method and instruments for determining properties of textile materials in Russia during the 18th and the first half of the 19th century. Izv.vys.ucheb.zav.; tekhn.leg.prom.  
no.6:48-51 '58. (MIRA 12:4)

1. Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti.  
(Textile fabrics—Testing)

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4

SHTARKOV, V. I., Cand Tech Sci -- (diss) "Progress in research into properties of textile materials in Russia in the 18th century and in the first half of the 19th." Moscow, 1960. 24 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Moscow Textile Inst); 150 copies; price not given; (KL, 26-60, 139)

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4"

SHTARKOV, V.I.

Russian scientists of the 18th century were investigators of the properties of textiles. Izv.vyz.ucheb.zav.;tekhn.tekst.prom. no.5: 135-139 '60. (MIRA 13:11)

1. Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti.  
(Scientists, Russian) (Textile research)

SHTARKOV, V.I.

Russian wool experts of the middle of the 19th century. Izv.vys.  
ucheb.zav.; tekhn.tekst.prom. no.6:144-148 '60. (MIRA 14:1)

1. Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshlennosti.  
(Woollen and worsted manufacture—Research)

SHTARKOV, V.I., kand.tekhn.nauk, dotsent

First investigator of the properties of textile materials in  
Russia; on the occasion of the 250th birthday of P.I.Rychkov.  
Tekst.prom. 22 no.9:76-79 S '62. (MIRA 15:9)

1. Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy promyshelnnosti.  
(Rychkov, Petr Ivanovich, 1712-1777)

SHTARKOV, V.I.

Work of M.V. Lomonosov in the field of fiber and dry goods  
production from glass. Izv. vys. ucheb. zav.; tekhn. tekst.  
(MIRA 16:11)  
prom. no.4:166-167 '63.

1. Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy  
promyshlennosti.

SHTARKOV, V.I.

Andrei Timofeevich Bolotov, scientist and analyst of the properties  
of textile materials of Russia. (1738-1833). Izv. vys. ucheb.  
zav.; tekhn. tekst. prom. no.6:143-145 '64. (MIRA 18:3)

1. Vsesoyuznyy zaochnyy institut tekstil'noy i legkoy  
promyshlennosti.

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4

SHTATIN, M.

New method for delivering repaired parts to automotive transporta-  
tion units. Avt.transp. 38 no.6:17 Je '60. (MIRA 14:4)  
(Novgorod Province—Transportation, Automotive)

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4"

SHTATLAND, E.S. (Kiyev)

Local properties of processes with independent increments.  
Teor. veroiat. i ee prim. 10 no.2:344-350 '65.  
(MIRA 18:6)

L 5053-66 EWT(d) IJF(c)  
ACCESSION NR: AP5024540

UR/0378/65/000/004/0061/0063  
519.152

45

B

AUTHOR: Shtatland, E. S.

TITLE: Certain properties of processes with independent increments connected with the distribution of their maxima

SOURCE: Kibernetika, no. 4, 1965, 61-63

TOPIC TAGS: servicing technique, cybernetics, Laplace transform

ABSTRACT: The author investigates the properties of homogeneous processes with independent increments (without the Gaussian component) having only positive jumps. Such processes can be described by means of Laplace transforms. Results are in the form of three theorems and several functional relationships which may be used in the theory of mass servicing, in stockpile control, and in the problem of discrimination among statistical hypotheses concerning processes with independent increments (this last problem utilizes the consecutive criterion due to Wald). Orig. art. has: 25 formulas.

ASSOCIATION: none

SUBMITTED: 27Mar65

ENCL: 00

SUB CODE: MA, DP

Card 1/1 NO REF SOV: 003

OTHER: 000

09010100

L 44332-66

EWP(d)

IJP(c)

ACC NR: AP6019057

SOURCE CODE: UR/0041/66/018/001/0092/0101

AUTHOR: Shtatland, E. S. (Kiev)

ORG: none

TITLE: Some problems connected with the output of a process with unilateral and  
bilateral independent increments at the rectilinear boundaries

SOURCE: Ukrainskiy matematicheskiy zhurnal, v. 18, no. 1, 1966, 92-101

TOPIC TAGS: distribution theory, Laplace transform, queueing theory

ABSTRACT: The uniform process  $\xi(t)$  with independent increments having only positive  
discontinuities and negative drifts with

$$\begin{aligned} M e^{-st} &= \exp(tA(s)), \\ A(s) &= -\gamma s + \int_0^\infty \left( e^{-sx} - 1 + \frac{sx}{1+x^2} \right) dN(x), \quad \operatorname{Re}(s) > 0, \\ \gamma - \int_0^\infty \frac{x}{1+x^2} dN(x) &< 0. \end{aligned} \tag{1}$$

Card 1/2

L 44332-66

ACC NR: AP6019057

has been investigated concerning the distribution of the maximum and the time of its attainment. Special attention is paid to the behavior for  $M \xi(1) \rightarrow 0$  (both distributions degenerate at infinity) and the magnitude of the first jump of the process through the nonnegative level is discussed. Some earlier results of B. A. Rogozin (Teor. veroyatn. i yeye primen., t. IX, 3, 1964, 498-516) are extended directly to the case of processes with continuous times for which all the formulas take on the simplest possible form. The Laplace transform of the instant of the first departure from a rectilinear strip is also given. Orig. art. has: 58 formulas.

SUB CODE: 12 / SUBM DATE: 04Jun65 / ORIG REF: 007 / OTH REF: 001

Card 2/2 blg

The availability of adsorbed phosphoric acid to plants.  
V. I. Shatnikov and S. V. Olinzova. Khimizdat,  
Selzaliz. Zemledeliya (Moscow) 1935, No. 5, 37-45. 1  
Iron hydroxide gel was treated with various quantities  
(100:500 ev.) of  $H_3PO_4$ , varying in concn. from 0.5 to  
0.001 mols. per l. The 0.001 M concn. showed complete  
removal of the  $P_2O_5$  with the 100:1 or 500:1 ratio of soln.  
to gel. In a second series of expts.  $NaH_2PO_4$  was used in  
place of the  $H_3PO_4$ . The concns. used were 0.25, 0.10  
and 0.001 M; the first two were used with gels of the  
ratio 300:1, the last one 500:1. The excess  $NaH_2PO_4$  was  
washed out and the gel with the adsorbed phosphate used  
in pot expts. with oats. The results show that with gels of  
high adsorptive capacity the yields were high. Analyses  
of the plants and their appearance are given in tables and  
photographs.

L. S. Joffe

SHTATNOV, V. I.

Soil Biology

Methods of determining the biological activity of soil, Dokl. Ak. sel'khoz., 17, No. 6,  
1952.

9. MONTHLY LIST OF RUSSIAN ACCESSIONS, Library of Congress, October 1952. Uncl.

SHTATNOV, V. I.

Using I.V. Tiurin's volumetric method with the aid of chromic acid  
for determining humus in soil [with German summary in insert] Pochvo-  
vedenie no.9:95-100 S '56. (MLRA 10:1)

1. Vsesoyuznyy institut udobreniy, agrokhimii i agropochvovedeniya.  
(Humus) (Soils--Analysis)

SHTATNOV, V.I., kand. sel'skokhozyaystvennykh nauk.

Efficiency of tillage methods suggested by T.S. Mal'tsev. Zemledelie  
6 no.1:38-46 Ja '58.  
(Tillage)

SHT/TSKIY, F.P.

Hydraulic withdrawal tool. Rata. predi. na gor. elekrotransp.  
(MIRA 18:2)  
no 9:44-45 '64.

1. Mekhanicheskaya baza Tramvayno-trolleybusnogo upravleniya  
Leningrada.

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4

SHTAUBERG, G.P., inzh.

Redesigning of the delivery unit of the 5TS10 feed pump. Energetik.  
(MIRÄ 18:9)  
13 no. 9:15-16 S '65.

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4"

SHTAUBERG, I. F.

USSR.

X-ray spectrum determination of hafnium in zirconium minerals and concentrates. E. P. Valushteva, I. D. Shevchenko, and I. F. Shtauber (V. I. Vernadskii Inst. Geochem. and Analyt. Chem. Sci. U.S.S.R., Moscow). Zhur. Anal. Khim. 10, 14-19 (1955).—In the outlined method Hf is detd. from the intensity of its  $\lambda\alpha$  line in the 2nd order of reflection. Ordinarily this line is interfered with by the  $\lambda\alpha$  line of Zr in its 4th order of reflection, the 2 lines are sep'd. by approx. 6 $\lambda$  units. This difficulty was obviated by applying a potential of approx. 18 kv., the excitation potential of ZrK being 18 kv. As comparison lines  $\lambda\alpha$  of Ta or Lu were used. The best spectrograms were obtained at 12-15 ma, and 10 min. exposure. Detns. were carried out in a special x-ray spectrophotograph which is described. The method was applicable to a min. Hf content of 0.3-0.3% and the av. error was around 5%. Also in J. Anal. Chem. U.S.S.R. 10, 11-14 (1955) (Eng. translation). M. Hesch

*SHTAUBERG, J. F.*

5(2) PHASE I WORK EXPERTISE 5W/2402

Analytical and SEM. Institut gosudarstvennoi analiticheskoy khimii  
Bulgaro-typer chemya, polucheniye, analiz, primenenie (Rare Earth Elements)  
Production, Analysis, and Use) Moscow, Izd-vo Akademiya Nauk SSSR, 1959. 353 p.  
Sbornik voprosy priklad.

Per., M. I. Zvezdin, Professor; RAS, or Publishing House; D. M. Tret'yanov  
and V. G. Levit, Head, M. I. P. Naukovich National Institute; I. P. Al'manov,  
Corresponding Member, USSR Academy of Sciences; T. N. Kostyukova, Doctor of  
Chemical Sciences, N. V. Pol'tynova, Candidate of Chemical Sciences, V. I.  
Kostyukova, Doctor of Chemical Sciences, M. M. Sogolova, Candidate of Chemical  
Sciences, and Yu. S. Balyantsev, Candidate of Chemical Sciences.

Purpose: This book is intended for chemists (in general) and for geochemists and  
industrial chemists in particular.

Content: This collection of articles consists of reports presented at the Institute of Geochemistry  
and Analytical Chemistry seminar held in June 1956 at the Institute of Geochemistry  
and Analytical Chemistry. Inst. V. I. Vernadsky. The book may be divided into  
two main sections: the characteristics, uses and production of new earth  
elements (rare); the methods of analyzing REE and the application of these  
elements, new earth elements and their use as catalysts. Considerable attention is devoted to the  
application of lanthanides chromatography in the production of rare forest  
all rare earth elements. The analytical methods of this method of separation  
are described by D. I. Rybachkov, V. I. Zvezdin, and Yu. S. Balyantsev.  
The analytical methods of separating  
the elements are discussed by T. N. Kostyukova (who is said to be the first  
in the USSR to develop methods of processing rare earth elements).  
V. P. Pol'tynova, A. V. Shchegolev, and G. P. Al'manov. Quantitative X-ray spectrometry  
of lanthanides and other rare earth elements are described by E. Ya. Yermishcheva, and chemical methods  
of analysis by I. P. Al'manov and V. I. Zvezdin. The dependence of the properties of lanthanides  
on pure products and exotic materials are discussed by I. N. Kostyukova.  
The same author by A. B. Repin, and his associates. All articles are accompanied by photographs, diagrams, tables, and bibliographical references.

Polyakov, B.S. and N. N. Nikosov. Fluorescent Determination of  
small quantities of lanthanides. 205

Zvezdin, V. I. and R. A. Yarushkevich. On the Problem of an Accurate  
and Convenient Method of Determining the Content of Ferric Oxide in a  
K2O Preparation. 214

Nikolskii, Yu. I. and V. V. Shevchenko. The X-ray Spectral Method of Analysis in Controlling  
Technological Processes in Separating Rare Earth Rare Earth Elements. 217

Zvezdin, A. N., N. I. Naukovich, and A. V. Balyantsev. Spectro-  
chemical Determination of Ni, Cu, and Fe in Glass Materials. Con-  
clusion I. Principle of the Method and Its Application on the  
Analysis of Borillium. 239

Zvezdin, A. N., N. I. Naukovich, A. N. Resunayev, and P. P.  
Yel'kin. Spectrochemical Determination of U, Th, and Sm in Atomic  
Materials. Conclusion II. Analysis of Thorium and Uranium. 251

SHTAUD, M. [Staud, M.]

Cracking of natural gas into acetylene in electric arc. Prace  
ust naft. 18:70-71 '61.

SHTAUDE, N. M.

PA 20T52

USSR/Physics

Jun/Aug 1947

Atmosphere - Visibility

Visibility

"The Principles of a Simplified Theory of Twilight Phenomena," N. M. Shtaudé, 20 pp

"Iz Ak Nauk SSSR, Ser Geog i Geofiz" Vol XI, No 4

A study is made of the brightness of the sky, in the daytime and at twilight, under the assumption of an ordinary atmospheric structure and first-order scattering of a sphere. A schematic formula is given for the brightness at any height.

20T52

SHTAUDE, N. M.

PA 58T49

USSR/Geophysics  
Solar Studies

Jan 1947

"Possible Connection Between Twilight and Solar Activity," N. M. Shtaudé, Inst Astron and Phys, Kazakhstan Acad Sci USSR, Alma-Ata, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LV, No 1

Describes photometric investigation of twilight, made by author at Alma-Ata in winter of 1945-1946, which coincided with extremely active sunspots. Further research revealed close connection between two phenomena. Submitted by Academician S. I. Vavilov, 22 Aug 1946.

58T49

Sep/Oct 48

USER/Physics

Atmosphere  
Stratosphere

"The Problem of Second-Order Scattering at Nightfall," N. M. Shtaudé, Inst of Astr and Phys, Acad Sci Kazakh SSR, 6 pp

"Iz Ak Nauk SSSR, Ser Geog i Geofiz" Vol XIII, No 5

On the basis of previous calculations of the theoretical brightness of the twilight sky, found theoretical value for the minimum scattering of second order in zenith for two extreme assumptions of atmospheric structure. Predominating influence of second-order scattering found by Hulburt, peculiar

53/49T90

Sep/Oct 48

(Contd)

USER/Physics

only to an isothermal stratosphere, conflicts with observations and is now repudiated. Result obtained is favorable for development of twilight method of studying upper layers. Submitted by Acad O. Yu. Schmidt, 1 Jul 47.

53/49T90

SHTAUDÉ, N. M.

SHTAUDE, N. M.

PA47T47

USSR/Geophysics

1 Mar 1948

Atmosphere - Density

Light - Dispersion

"Effect of Diffusion of the Second Order on Brightness  
of the Crepuscle at the Zenith," N. M. Shtauda, Inst  
Astr and Phys, Acad Sci Kazan SSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 7  
p. 261-282

Author's calculations led him to conclude that strong  
increase of the influence of dispersion of the second  
order not property of the atmosphere in general, but  
only that part having very small density and pressure  
at great heights. Great many facts cited to support  
this, and in particular, the rocket flights in

USSR/Geophysics (Contd)

1 Mar 1948

America, which reflect such atmosphere and annual  
Halbert's results. Submitted by Academician S. I.  
Vavilov, 5 Jan 1948.

47T47

USSR/Physics  
Atmosphere  
Stratosphere

Sep/Oct 48

"The Problem of Second-Order Scattering at Night-fall," N. M. Shtaudde, Inst of Astr and Phys, Acad Sci Kazakh SSR, 6 pp

"Iz Ak Nauk SSSR, Ser Geog i Geofiz" Vol XII, No 5

On the basis of previous calculations of the theoretical brightness of the twilight sky, found theoretical value for the minimum scattering of second order in zenith for two extreme assumptions of atmospheric structure. Predominating influence of second-order scattering found by Hulbert, peculiar

PA 53/49T90

USSR/Physics

(Contd)

Sep/Oct 48  
only to an isothermal stratosphere, conflicts with observations and is now repudiated. Result obtained is favorable for development of twilight method of studying upper layers. Submitted by Acad O. Yu. Shmidt, 1 Jul 47.

53/49T90

SHTAUDE, N. M.

SHTAUDE, N. M.

PA47T47

USSR/Geophysics

1 Mar 1948

Atmosphere - Density  
Light - Dispersion

"Effect of Diffusion of the Second Order on Brightness of the Crepuscle at the Zenith," N. M. Shtaudé, Inst Astr and Phys, Acad Sci Kazan SSR, 2 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 7  
P. 1251-1282

Author's calculations led him to conclude that strong increase of the influence of dispersion of the second order not property of the atmosphere in general, but only that part having very small density and pressure at great heights. Great many facts cited to support this, and in particular, the rocket flights in

USSR/Geophysics (Contd)

1 Mar 1948

America, which reflect such atmosphere and annual Bulbert's results. Submitted by Academician S. I. Vavilov, 5 Jan 1948.

47847

DOC PHYSICOMATH SCI

SHTAUDE, N.M

Dissertation: "Theory Twilight."

15 Jun 49

Geophysics Inst. Acad Sci USSR

SO Vecheryaya Moskva  
Sum 71

SHTAUDE, N. M.

Osveshchennost' atmosfery (oreol) ot zemnykh istochnikov sveta (Illumination of the Atmosphere (Halo) by Terrestrial Sources of Light). Akademiya Nauk SSSR. Izvestiya. Seriya geogr. i geofiz., 1949, v. 13, no. 1, p. 74-88, tables, diagrs., 2 refs.

AS262.A6246 v. 13

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4

SHTAUDE, N. M.

"Illumination of the Atmosphere (Aureole) from Terrestrial Sources of Light", Iz  
Ak Nauk SSSR, Ser Geograf i Geofiz, Col. 13, No. 2, pp 154-162, 1949.

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4"

SHTAUDE, N.M.

60/49T108

USSR/Physics  
Stratosphere  
Crepuscular Light

Jul/Aug 49

"Twilight Method of Studying the Stratosphere,"  
N. M. Shtauda, Acad Sci Kazakh SSR, 12 pp

"Iz Ak Nauk SSSR, Ser i Geofiz" Vol XIII, No 4

Gives a short history of the problem and state of  
twilight theory at present. Special attention is  
paid to achievements of Soviet research workers  
interested in obtaining a formula for the bright-  
ness of the twilight sky in absolute units. Sub-  
mitted by Acad S. I. Vavilov 10 Oct 48.

60/49T108

SHTAUDE, N. I.

Feb 49

USSR/Geophysics  
Atmosphere - Temperature

"Rediffusion at Nightfall in Various Atmospheric Formations," N. I. Shtauder, Acad.  
Sci. Kazakh SSR, 4 pp.

Dok. Ak. Nauk SSSR, Vol. 64, No. 6, 1949

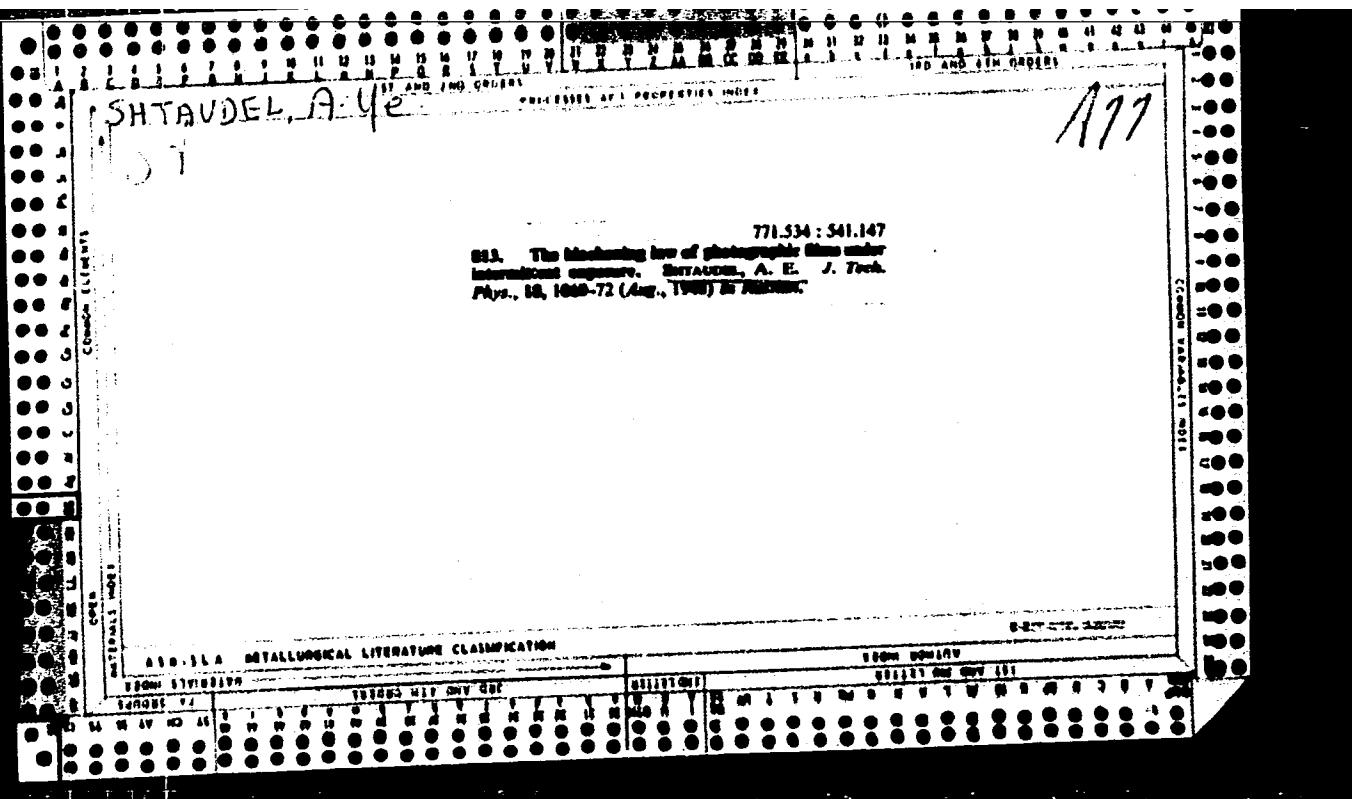
Advances hypothesis which eliminates the following inconsistencies: (1) discrepancy  
of the temperature curve obtained by crepuscular observations at heights of 70-100  
km with other data on upper layers, and (2) insufficient theoretical brilliance of  
the zenith in comparison with the observations at  $\zeta=100^\circ$ . Submitted by Acad.  
S. I. Vavilov, 24 Dec 47.

29/49T43

SHTAUDE, N.M.

Methods of processing spectrograms of plant self-radiation.  
Trudy Sekt.astrobot. AN Kazakh.SSR. 1:25-36 '53. (MLRA 10:2)

(Plants--Spectra)



APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4"

"APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4

SHTAUF, Ye. A.

Molecular Physics. Glavpoligrafizdat, Main Polygraphic Publishing House, 576 pp,  
1952.

APPROVED FOR RELEASE: 07/13/2001

CIA-RDP86-00513R001550010014-4"

SHT'AVA, Zdenek [Stava, Z.], kand.med.nauk; TVAROG, Frantisek [Tvaroch, Frantisek],  
kand.med.nauk; MENSHIK, Miroslav [Mensik, Miroslav], dotsent

Study of scleroderma from the viewpoint of endocrinology. Vest.  
derm.i ven. no.5:14-19 '61. (MIRA 14:12)

1. Iz 11-y dermatologicheskoy kliniki v Prague (zav. -- prof.  
K.G. Gyubshman) i endokrinologicheskogo otdeleniya KUMZ [Krajsky  
ustav nerochnego zdravi - Regional Public Health Institute]  
(glavnnyy vrach -- dotsent Fr. Tvarog).  
(SCLERODERMA) (ENDOCRINOLOGY)

SHTAVEMAN, A.V., inzh.

Pyrophyllite deposits in the Suran Valley used as a ceramic  
raw material. Trudy NIISstroikерamiki no.13:219-225 '58.  
(MIRA 12:5)

(Suran valley--Pyrophyllite)  
(Ceramic materials)

SHTAVEMAN, A.V., inzh.

Changes in pyrophyllite during heating. Trudy NII Stroikeramiki  
no. 14:130-140 '59.  
(Ceramic materials)

15(2)

SOV/72-59-2-10/21

AUTHOR:

Shtaveman, A. V.

TITLE: Pyrophyllite of the Suranskoye Deposit as a Ceramic Raw Material (Pirofillit Suranskogo mestorozhdeniya kak keramicheskoye syr'ye)

PERIODICAL: Steklo i keramika, 1959, Nr 2, pp 31-34 (USSR)

ABSTRACT: The "Suran" deposit is situated 25 km east of the railroad line Akmolinsk-Karaganda-Balkhash and 40 km south of Karaganda. Table 1 specifies the chemical composition of the Suranskiy pyrophyllite. The first experiments were carried out with a porcelain body consisting of 47% kaolin, 29% quartz, 24% feldspar; in composition Nr 2  $\text{SiO}_2$  was used in place of quartz.

Table 2 gives the experimental results of the burnt samples. In further experiments quartz and kaolin were replaced by pyrophyllite. The mass composition is specified in table 3 and table 4 gives the technical data of the masses in the raw and burnt states. To investigate the possibility of employing this pyrophyllite in the production of refractory products, pyrophyllite and clay masses of the "Beloye glinishche" deposit were analyzed (Table 5) and it was found that the samples prepared from pyro-

Card 1/2

SOV/72-59-2-10/21

Pyrophyllite of the Suranskoye Deposit as a Ceramic Raw Material

phyllite masses comply with the requirements of OST 16258-39. The experiments made showed that the Suranskiy pyrophyllite can be used in place of quartz and kaolin for the production of household china. The composition of 65% pyrophyllite, 20% kaolin clay and 15% feldspar is, as to its properties, analogous to the household china composition. Slag-proof refractory products can be obtained from the Suranskaya deposit pyrophyllite on adding 10-20% plastic refractory clay by using the dry-pressing method and by burning at 1350°. The composition of 70% pyrophyllite, 15% feldspar, and 15% kaolin clay possesses a high acid resistance after burning at 1300° and meets, as to its ceramic properties, the demands of the acid-resistant ceramics. On the basis of the experimental results, the Suranskiy pyrophyllite can be recommended to the ceramic industry.

There are 5 tables.

Card 2/2

BERZON, S.A., MEYTINA, V.A., SHTAVEMAN, A.V.

Using new machinery in processing kaolin. Stek. i ker. 17 no.8:27-  
30 Ag '60. (MIRA 13:8)  
(Kaolin)

S/072/63/000/003/004/004  
B101/B186

AUTHORS: Berzon, S. A., Candidate of Technical Sciences, Meytina,  
V. A., Shtaveman, A. V., Senior Scientific Worker

TITLE: A new effective coagulant

PERIODICAL: Steklo i keramika, no. 3, 1963, 27-30

TEXT: The properties required of kaolin suspensions cannot always be obtained when lime milk is used as a coagulant in the wet concentration of kaolin. For this reason the coagulating efficiency of acetic acid, hydrochloric acid, potash alum and polyacrylamide (PAA) were tested. Raw kaolin containing 68.81%  $\text{SiO}_2$ , 22.73%  $\text{Al}_2\text{O}_3$  was used. After concentration, a 23.8% kaolin suspension was obtained with a kaolin composition of 46.39%  $\text{SiO}_2$ , 39.31%  $\text{Al}_2\text{O}_3$ . The effectiveness of the coagulants was determined from the filtration rates of concentrated and coagulated kaolin. Results: Their effectiveness decreased in the following order: (1) 36 vol% of a 5% PAA solution at 55-60°C; (2) 6.5 vol% of the PAA solution at the same concentration and temperature; (3) 1.5 vol% of

Card 1/2

S/072/63/000/003/004/004  
B101/B186

A new effective coagulant

a 2% lime milk at 30°C; (4) 10% solutions of acetic and hydrochloric acids and of alum had little effect. The filterability of the kaolin coagulated with PAA increased with increasing temperature. Under the same conditions the filterability of the kaolin concentrated without an electrolyte in hydrocyclone was higher than that of kaolin concentrated with an electrolyte. Comparison with lime milk showed that kaolin coagulated with PAA had a higher bending strength (5.2-5.5 compared with 4.2 kg/cm<sup>2</sup>) and a lower pH (6.1-8.1 compared with 9.3). Although the elastic coefficient of kaolin coagulated with PAA was very low (0.013-0.018), it showed no thixotropy and met the technical requirements. Unlike lime milk PAA can be added over a wide range, from 6.5 to 36 vol%, which is more in line with the technical requirements. Articles manufactured from kaolin coagulated with PAA were of high quality. Since PAA is expensive (6 rubles 88 kop. per kg) attempts were made to coagulate kaolin by adding 4 vol% of 2% CaO suspension and 1.5 vol% of 0.5% PAA solution. These experiments were also successful. There are 2 tables.

ASSOCIATION: NIIStroykeramika

Card 2/2

BERZON, S.A., kand.tekhn.nauk; MEYTINA, V.A., kand.tekhn.nauk; SHTAVEMAN,  
A.V., inzh.

Ukrainian feldspar as a source of fluxing agents for the ceramic  
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